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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,704	05/16/2002	Camilo Anthony Leo Selwyn Colaco	8830-21	7595

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EXAMINER	
PORTNER, VIRGINIA ALLEN	
ART UNIT	**PAPER NUMBER**
1645	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/049,704	COLACO, CAMILO ANTHONY LEO SELWYN	
	Examiner	Art Unit	
	Ginny Portner	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/12/07*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 17* is/are pending in the application.

4a) Of the above claim(s) *1-9 and 15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-14 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-9 and 15 stand withdrawn from consideration.
Amended claims 10-14 and 17 are currently under examination.
1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 12, 2007 has been entered.

Rejections Withdrawn

3. The rejection of claims 10-14 and 17 under 35 U.S.C. 112, first paragraph (Scope of enablement) is herein withdrawn in light of the compositions having been amended to be directed to immunogenic compositions.

4. ***(Rejection Withdrawn) Claim Rejections - 35 USC § 102:*** The rejection of claims 10, 11 and 13 under 35 U.S.C. 102(b) as being anticipated by Laminet et al (EMBO Journal. 1990. 9(7): 2315-2319) is herein withdrawn in light of the heat shock complex is produced in –situ (native location).

5. ***(RejectionWithdrawn) Claim Rejections - 35 USC § 102:*** The rejection of claims 10, 11 and 13 under 35 U.S.C. 102(e) as being anticipated by Wallen et al (US 5,747,332) is herein withdrawn in light of the heat shock complex is produced in –situ (native location).

6. ***Rejection Withdrawn***: The rejection of claims 10-11, 17 under 35 U.S.C. 102(b) as being anticipated by Yokota et al (1994) is herein withdrawn in light of the heat shock complex is produced in –situ (native location) in an ATP dependent manner.

7. ***Rejection Withdrawn*** The rejection of claims 10-11, 17 under 35 U.S.C. 102(b) as being anticipated by Eschweiler et al (1993) is herein withdrawn in light of the heat shock complex is produced in –situ (native location) in an ATP dependent manner.

8. ***Rejection Withdrawn*** The rejection of claims 10-11, 17 under 35 U.S.C. 102(b) as being anticipated by Austin et al (1992) is herein withdrawn in light of the heat shock complex is produced in –situ (native location) in an ATP dependent manner.

Response to Arguments for Rejections Maintained

9. ***(Rejection Maintained) Claim Rejections - 35 USC § 102***: The rejection of claims 10-14, and claims 17 under 35 U.S.C. 102(e) as being anticipated by Srivastava (US 5,961,979) is traversed on the grounds that:

a. the process of chemically synthesizing and conjugating results in the product of a heat shock protein/antigen peptide fragment that differs from heat induced heat shock proteins with an antigenic peptide fragment of the instant invention and are not produced in situ.

10. It is the position of the examiner that Srivastava disclose compositions of antigenic components that are purified from a preparation of disrupted pathogen (see col. 3, lines 36-37 and lines 43-45), wherein the intracellular concentration increases when a cell is exposed to stressful stimuli, to include heat shock, and is capable of binding other proteins or peptides (see col. 5, lines 28-38) and the immunogenic stress protein-peptide complexes include E.coli stress/heat shock proteins (see col. 5, line 57 and col. 6, lines 17-21), and complex in the presence of ATP (see col. 5, line 34). Therefore, while one of the embodiments of Srivastava is produced by chemical synthesis, the reference discloses the attainment and formulation of compositions that comprise Bacterial/E.coli heat shock protein-peptide complexes from bacteria through disruption of the bacterial pathogen and

then naturally purified and include peptides that "originate from the pathogen itself" (see col. 6, lines 12-13). non-covalently bound to an antigenic peptide from a bacteria, protozoa or fungi, but the reference discloses more than just these embodiments.

1. Srivastava's heat shock proteins are not limited to mammalian heat shock proteins. Srivastava discloses DnaK and Hsp70 from E.coli (see col. 5, line 57), and heat shock proteins (see Table 1, col. 16, Hsp60, Hsp70 and Hsp90 from E.coli). The heat shock proteins of Srivastava are defined as "a protein whose intracellular concentration increases when a cell is exposed to a stressful stimuli, it is capable of binding other proteins or peptides and it is capable of releasing the bound proteins or peptides in the presence of adenosine triphosphate (ATP) or low pH." (see col. 11, lines 4-10). The examiner agrees that the antigenic peptide fragment in the complexes of Srivastava are those claimed by Applicant (see Srivastava col. 6, lines 41-45; col. 5, lines 20-22; col. 7, lines 3-5; col. 6, line 67).

2. The stresses described by Srivastava include heat shock stress (see col. 11, line 13), as well as "nutrient deprivation, metabolic disruption, oxygen radicals and intracellular pathogens (col. 11, lines 20-21)."

The instantly claimed compositions are defined by the recited product by process limitations, but may be produced by a different process that produces the same or equivalent product and are not limited to the compositions produced in Examples 3 and 4. Srivastava discloses the claimed compositions produced by a isolation form natural sources that have been heat shocked or through different process, specifically reconstitution. The bacterial heat shock protein (see Table 1 and definitions) is complex together with a antigenic peptide fragment from a bacteria (see col. 7, line 7

"Chlamydia"), fungus, or protozoa, wherein the heat shock protein is isolated from natural sources or recombinantly produced (see col. 21, line 28) and then complexed with the antigenic peptide fragment that can be from natural sources or has been "chemically synthesized" (see col. 21, lines 24-27)" in vitro to generate immunogenic stress protein-antigenic peptide fragment complexes.

Srivastava still anticipates the instantly claimed invention as now claimed, in light of the fact that the instant claims are not limited to complexes from extracellular bacteria and the heat shock protein/peptide complexes are disclosed in Srivastava to be obtainable from natural sources through disruption of the bacterial cells.

Since the Office does not have the facilities for examining and comparing applicant's protein with the protein of the prior art, the burden is on applicant to show a novel or unobvious difference between the claimed product and the product of the prior art (i.e., that the protein of the prior art does not possess the same functional characteristics of the claimed protein). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594 No side by side comparisons have been submitted to show the novel or unobvious difference between the claimed compositions and the product of the prior art.

New Grounds of Rejection

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 10-14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Phipps et al (1991).

Phipps et al disclose the instantly claimed invention directed to:

Instant claim 10, 17: a complex of a heat shock protein that requires ATP for the formation of the complex that comprises a heat shock protein together with a peptide (see page 1711, title "Novel ATPase complex selectively accumulated upon heat shock"; E.coli: page 171, col. 2, "membrane free French press lysates" including E.coli. The Ecoli complex possessed ATPase activity (see page 1718, col. 1, paragraph 1, was immunocross reactive , Table 1, and Figure 10, lane h E.coli), and the "level of the complex in the cell is elevated following heat shock (see page 1711, col. 2, paragraph 1; see page 1713, col. 1, paragraph 2 "several different particles"; see page 1717, col. 1, paragraph 1 "73% of the total soluble protein compared with 11%" and 6%).

Instant claim 11: The purified complexes were obtained by fractionation of a membrane-free French press lysate (see page 1715, lines 3-4) after growth of the cells at 98° degrees C (see page 1720, materials and methods, col. 2, paragraph 2, line 3), as well as a shift from 102° degrees C to 108° degrees C (see abstract, page 1711), the optimal/normal growth conditions being 59° degrees C (see page 1713, col. 1, paragraph 2).

Purified complexes were obtained by the process of:

Exposing the bacteria to a stress inducing heat shock stimulus (see abstract, temperature shift from 102° degrees C to 108° degrees C (see abstract, page 1711; page 1721, col. 1 "Heat Shock" section), , and

Extracting from the heat shocked cells complexes (see Figure 1, and see page 1715, lines 3-4) which are then combined with an aqueous carrier buffer, specifically Tris-NaCl, pH 7.0 (see page 1720, col. 2, paragraph 8 "50 mM Tris-CL pH 7.0, 50 mM NaCl").

Instant claim 12: the purified complexes were combined with an adjuvant (see page 1721, col. 1, paragraph 5 "Freund's complete adjuvant")

Instant claim 13: The purified complexes were combined with an aqueous carrier buffer, specifically Tris-NaCl, pH 7.0 (see page 1720, col. 2, paragraph 8 "50 mM Tris-CL pH 7.0, 50 mM NaCl").

Instant claim 14: the purified complexes were formulated for inducing an immune response in a method that comprised the step of :

administering to an animal purified complexes together with an adjuvant, in an amount effective to induce an immune response (see page 1721, col. 1, paragraph 5 "Antiserum was raised in a male rabbit by injection of a 1:1 (v/v) emulsion of the purified complex in Freund's complete adjuvant").

Phipps et al anticipates the instantly claimed invention as now claimed.

The purification or production of a product by a particular process (i.e. the instant recombinant) does not impart novelty or unobviousness to a product when the product is taught by the prior art. This is particularly true, when the properties of the product are not changed by the process in an unexpected manner. *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi*, 218 USPQ 289, 292-293 (CAFC 1983); and *In re Brown*, 173 USPQ 685 (CCPA 1972). Therefore, even if a particular process used to prepare a product is novel and unobvious over the prior art, the product *per se*, even when limited to the particular process, is unpatentable over the same product taught by the prior art. *In re King*, 107 F.2d 618, 620, 43 USPQ 400, 402 (CCPA 1939); *In re Merz*, 97 F.2d 559, 601, 38 USPQ 143-45 (CCPA 1938); and *United States v. Ciba-Geigy Corp.*, 508 F.supp. 1157, 1171, 211 USPQ 529, 543 (DNJ 1979).

5. Claims 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Wawrzynow et al (1995).

Wawrzynow et al disclose the instantly claimed invention directed to:

a complex of a heat shock protein that requires ATP for the formation of the complex with a peptide (see page 1873, Figure 6 (a, b, c); Figure 7-8, page 1874), the complex being in combination with an aqueous carrier (see Figure 6, "PBS buffer" ledger narrative line 1).

The heat shock protein is known as ClpX, and the gene encoding the protein is under heat-shock regulation (see page 1868, col. 1, last two lines) and requires the

presence of ATP or ATP-y-S for efficient interaction with other proteins (see page 1867, col. 1, article summary and page 1868, sentence bridging col. 1 to col. 2 "The clpX gene codes for a truncated member of the Hsp100 family, possessing one ATP binding site as well as a zinc binding motif").

Wawrzynow et al anticipates the instantly claimed invention as now claimed.

The purification or production of a product by a particular process (i.e. the instant recombinant) does not impart novelty or unobviousness to a product when the product is taught by the prior art. This is particularly true, when the properties of the product are not changed by the process in an unexpected manner. *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi*, 218 USPQ 289, 292-293 (CAFC 1983); and *In re Brown*, 173 USPQ 685 (CCPA 1972). Therefore, even if a particular process used to prepare a product is novel and unobvious over the prior art, the product *per se*, even when limited to the particular process, is unpatentable over the same product taught by the prior art. *In re King*, 107 F.2d 618, 620, 43 USPQ 400, 402 (CCPA 1939); *In re Merz*, 97 F.2d 559, 601, 38 USPQ 143-45 (CCPA 1938); and *United States v. Ciba-Geigy Corp.*, 508 F.supp. 1157, 1171, 211 USPQ 529, 543 (DNJ 1979).

6. Claim 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Rambukkana et al (Nov. 1992).

(Instant claim 10) Rambukkana et al (Nov. 1992) disclose a Mycobacterium leprae heat shock protein complex of 85 kDa produced in situ (see title, abstract), expressed in the cytoplasm of the bacterium (see page 43525, col. 2, middle of second paragraph) and attached to the cell wall of the pathogen (see page 4518, col. 1, second paragraph), wherein the heat shock protein-peptide complex was purified in its native confirmation (see abstract, line 5 "native purified proteins" as wall as complexed see " page 4518, col. 1, parageaph5 "whole sonicate of M. tuberculosis"; col. 2, paragraphs 1-2 "cytosol fraction from the same M. tuberculosis sonicate" and "actively secreted antigen 85 complexes" "were purified. ".

7. Claim 10 is rejected under 35 U.S.C. 102(a) as being anticipated by Motohashi et al (June 1999).

Motohashi et al disclose the instantly claimed invention directed to:

Instant claim 10: a complex of a heat shock protein that requires ATP for the formation of the complex that comprises a heat shock protein together with a peptide (abstract summary, page 7184; and Figure 1, page 7186; page 7187, Figure 2, Frame C), and the "level of the complex in the cell is elevated following heat shock (see page 1711, col. 2, paragraph 1; see page 1713, col. 1, paragraph 2 "several different particles"; see page 1717, col. 1, paragraph 1 "73% of the total soluble protein compared with 11%" and 6%).

Motohashi et al anticipates the instantly claimed invention as now claimed.

The purification or production of a product by a particular process (i.e. the instant recombinant) does not impart novelty or unobviousness to a product when the product is taught by the prior art. This is particularly true, when the properties of the product are not changed by the process in an unexpected manner. *In re Thorpe*, 227 USPQ 964 (CAFC 1985); *In re Marosi*, 218 USPQ 289, 292-293 (CAFC 1983); and *In re Brown*, 173 USPQ 685 (CCPA 1972). Therefore, even if a particular process used to prepare a product is novel and unobvious over the prior art, the product *per se*, even when limited to the particular process, is unpatentable over the same product taught by the prior art. *In re King*, 107 F.2d 618, 620, 43 USPQ 400, 402 (CCPA 1939); *In re Merz*, 97 F.2d 559, 601, 38 USPQ 143-45 (CCPA 1938); and *United States v. Ciba-Geigy Corp.*, 508 F.supp. 1157, 1171, 211 USPQ 529, 543 (DNJ 1979).

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164

USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 10, 12 and 17 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3 and 12 of copending Application No. 10/363,454. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending species of invention is encompassed by the instantly claimed composition of claims 10, 12 and 17, wherein the instant composition may be a heat shocked bacteria that comprises the one or more complexes or may be complexes produced by the bacteria that have been extracted from the bacteria. The heat-shocked bacterium that comprises complexes in situ (instant application, new combination of claim limitation) reads on the copending application's compositions of heat-shocked bacteria. The copending species encompassed by the instantly claimed genus of compositions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US006410028B1, US006455503B1 and US006447781B are cited to show heat shock protein complexes that comprise a method of stimulating an immune

response to bacterial antigenic peptide in association with a heat shock protein (see '028, claims 1-3, 4, 6 and 5) and the host cells are bacteria (see '027, claims 18-19 and 29-30)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ginny Portner whose telephone number is (571) 272-0862. The examiner can normally be reached on flextime, but usually M-F, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on (571) 272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MARK NAVARRO
PRIMARY EXAMINER

VGP
April 17, 2007